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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/727,839      | 11/30/2000  | Ashok Machcha        | Q00-1017-US1        | 3918             |

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[REDACTED] ART UNIT      [REDACTED] PAPER NUMBER

2652

DATE MAILED: 08/01/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                        |                     |  |
|------------------------------|------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                              | 09/727,839             | MACHCHA ET AL.      |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                              | Julie Anne Watko       | 2652                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 08 July 2002.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-15 and 19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-15 and 19 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 30 November 2000 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
  - a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment(s)

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)           | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ . | 6) <input type="checkbox"/> Other: _____ .                                   |

## DETAILED ACTION

### *Election/Restrictions*

1. Applicant's election of Species A (currently claims 1-15 and 19) in Paper No. 10 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
2. It is noted that Applicant has cancelled all non-elected claims.

### *Drawings*

3. The Examiner objects to the drawings because they contain pencil overwriting and taped-on alterations. Furthermore, the Draftsperson has objected to the drawings (see notice 948 attached to paper no. 5, mailed April 1, 2002). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. **The objection to the drawings will not be held in abeyance.**

### *Claim Rejections - 35 USC § 103*

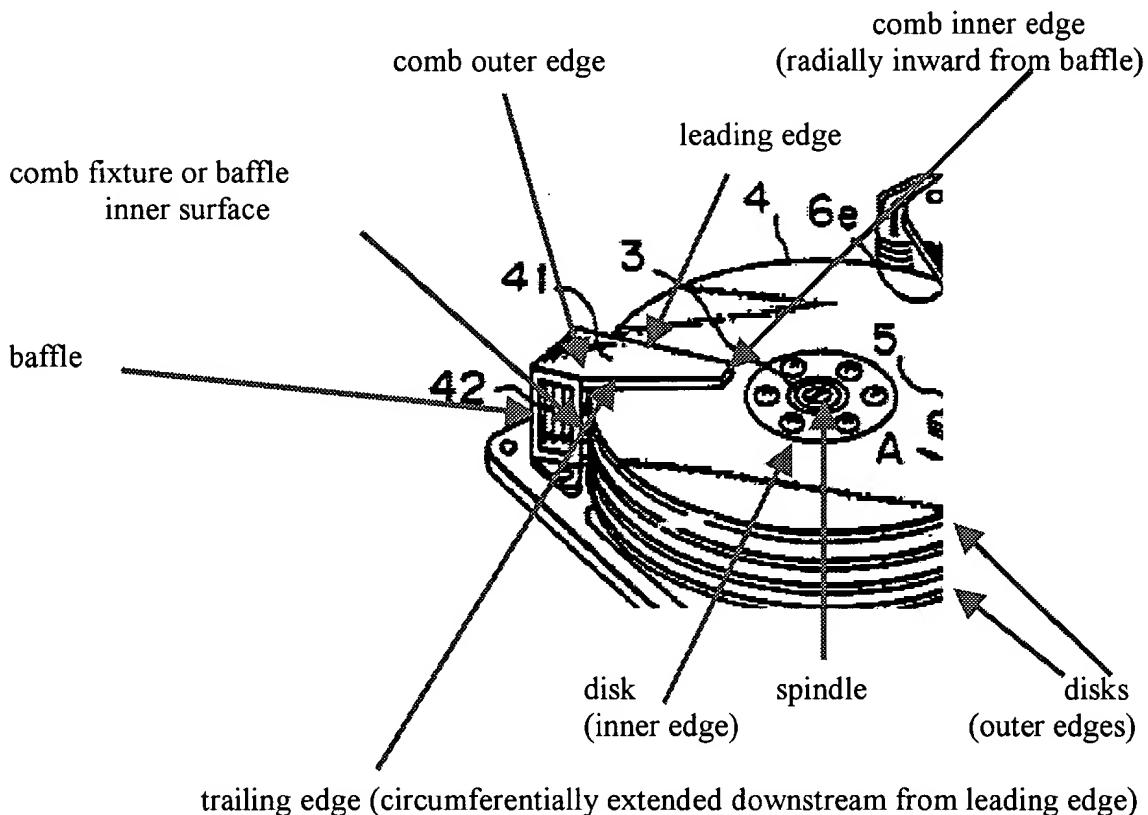
4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-15 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mihara et al (US Pat. No. 5418666).

As recited in claim 1, Mihara et al show a disk drive assembly comprising: a spindle 3 adapted to rotate about a longitudinal axis (out of page in Fig. 1, vertical in Fig. 5); data storage disks 4 surrounded by fluid medium (air), each of the disks 4 having a disk outer edge and a disk inner edge, the disks being mounted on the spindle 3 to rotate therewith about the spindle longitudinal axis, rotation of the disks in a first direction creating a flow of the fluid medium in the first direction R, at least one of the disks having approximately concentric tracks ("a desired track", see col. 1, line 63) disposed at different radial positions between the disk outer edge and the disk inner edge; slider assemblies (including 8), each slider assembly including at least one transducer 5 head capable of reading and writing information on one of the disks; an actuator assembly 6 for positioning the slider assemblies over the tracks; a baffle (see Fig. 5, annotated detail) disposed upstream of the actuator assembly, the baffle (in which 42 is located) extending in a direction of the spindle longitudinal axis (vertically in Fig. 5) and having an inner surface disposed outside of the outer edges of the disks; and combs 41 mounted on the baffle, at least one of the combs: disposed adjacent to at least one of the disks 4 to form a gap (between 4 and 41) between the comb 41 and a corresponding adjacent disk 4, the gap disposed in the direction of the spindle longitudinal axis; extends radially inward from a comb outer edge to a comb inner edge, a portion of the comb outer edge disposed at the inner surface of the baffle; disposed upstream (see Fig. 1, in which 41 is upstream of 8 in an R direction) of a corresponding actuator assembly (including 8); extending in a disk circumferential direction from a leading edge to a trailing edge, the leading edge disposed upstream (see R direction in Fig. 1; see also ) of the trailing edge; and extending radially inward from the baffle.

Mihara et al Fig. 5, annotated detail



As recited in claim 11, Mihara et al show a disk drive assembly comprising: a spindle 3 adapted to rotate about a longitudinal axis; data storage disks 4 surrounded by fluid medium (air), each of the disks having a disk outer edge and a disk inner edge, the disks being mounted on the spindle to rotate therewith about the spindle longitudinal axis, rotation of the disks 4 in a first direction creating a flow of the fluid medium in the first direction, at least one of the disks having approximately concentric tracks disposed at different radial positions between the disk outer edge and the disk inner edge; slider assemblies (including 8), each slider assembly including at least one transducer head 5 capable of reading and writing information on one of said disks 4; an actuator assembly 6 for positioning the slider assemblies over the tracks; a comb

fixture (including 42) disposed apart from the actuator assembly 6, and having an inner surface separated by a first distance from the outer edges of the disks 4; combs 41 coupled with and extending inwardly from the comb fixture, at least one of the combs 41: disposed adjacent to a corresponding adjacent disk 4 to provide a gap between the comb 41 and the corresponding adjacent disk 4, the gap disposed in the direction of the spindle longitudinal axis; and extending circumferentially (see Fig. 5 annotated detail) around the spindle longitudinal axis.

As recited in claim 19, Mihara et al show a comb assembly for reducing cross-track motion in a disk drive, the disk drive including at least one disks 4, a spindle 3, and at least one slider assembly (including 8), the comb assembly comprising: at least one baffle (in which 42 is located) disposed upstream of the slider assemblies, the baffle having an inner surface (see Fig. 5 annotated detail) disposed outside of outer edges of the disks 1; and at least one comb 41 mounted on the baffle, wherein each comb 41: is disposed adjacent to at least one of the disks 4 to provide a gap between the comb 41 and a corresponding adjacent disk 4, the gap disposed in the direction of a spindle longitudinal axis; extends radially inward from a comb outer diameter (see comb outer edge in Fig. 5 annotated detail), the comb outer diameter disposed approximately at the inner surface of the baffle; disposed upstream (see R direction in Fig. 1) of the slider assemblies (including 8); extending in a disk circumferential direction from a leading edge to a trailing edge, the leading edge disposed upstream of the trailing edge; and extending radially inward from the baffle (see Fig. 5 annotated detail).

Mihara et al, however, remain silent as to the specific dimensional relationships set forth in claims 1, 9-12, 14-15 and 19.

Official notice is taken of the fact that it is notoriously old and well known in the comb art to routinely modify a comb structure in the course of routine optimization/ experimentation and thereby obtain various optimized dimensions and dimensional relationships including those set forth in claims 1, 9-12, 14-15 and 19.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have had the comb of Mihara et al satisfy the dimensions and dimensional relationships set forth in claims 1, 9-12, 14-15 and 19. The rationale is as follows: one of ordinary skill in the art would have been motivated to have had the comb of Mihara et al satisfy the dimensions and dimensional relationships set forth in claims 1, 9-12, 14-15 and 19 since it is notoriously old and well known in the comb art to routinely modify a comb structure in the course of routine optimization /experimentation and thereby obtain various optimized dimensions and dimensional relationships including those set forth in claims 1, 9-12, 14-15 and 19. Moreover, absent a showing of criticality (i.e., unobvious or unexpected results), the dimensions and dimensional relationships set forth in claims 1, 9-12, 14-15 and 19 are considered to be within the level of ordinary skill in the art.

Additionally, the law is replete with cases in which when the mere difference between the claimed invention and the prior art is some range, variable or other dimensional limitation within the claims, patentability cannot be found.

It furthermore has been held in such a situation, the Applicant must show that the particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range. *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Moreover, the instant disclosure does not set forth evidence ascribing unexpected results due to the claimed dimensions. See *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338 (Fed. Cir. 1984), which held that the dimensional limitations failed to point out a feature which performed and operated any differently from the prior art.

As recited in claim 2, Mihara et al show that the baffle comprises a baffle plate (see Fig. 5, which clearly shows filter 42 surrounded by 4 baffle plates).

As recited in claim 3, Mihara et al show that the baffle plate (4 baffle plates surround 42) and the combs 41 are elements of an integral mechanical structure (see Fig. 5).

As recited in claim 4, Mihara et al show a second set of combs (arbitrarily choose one of the four combs 4; the remaining combs constitute a second set of combs) extending radially inward from an outer attachment element inner surface (see baffle inner surface in Fig. 5 annotated detail), the outer attachment element inner surface having a diameter not less than the outer edge of the disks 4, each of the second set of combs: disposed in a position adjacent at least one of the disks 4 in the direction of the spindle 3 longitudinal axis ("A baffle plate 41 is disposed corresponding to each of the four magnetic discs 4 facing the upper surface thereof", see col. 4, lines 41-43); and disposed downstream (please note that each comb 41 is located simultaneously upstream and downstream of the slider assemblies, due to the cyclical nature of the disk rotation and airflow) of the slider assemblies (including 8).

As recited in claim 5, Mihara et al show that at least one of the combs comprises more than one element (arbitrarily choose two of parts 41 as constituting one comb, such said one comb comprises more than one element 41), at least two of the comb elements 41 are separated

from each other by an intra-comb gap (in which disc 4 is located), the intra-comb gap extending radially from approximately the comb inner diameter to approximately the comb outer diameter.

As recited in claim 6, Mihara et al show that at least one of the combs 41 comprises a single integral structure 41.

Mihara et al are silent regarding the specific shape as recited in claims 7-8; however, it is noted by the Examiner that the prior art combs of Mihara et al perform exactly the same function in exactly the same way as the combs of the claimed shape.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the device of Mihara et al with the claimed shape as is notoriously well known in the art. The rationale is as follows: one of ordinary skill in the art would have been motivated to arrive at the claimed shape in the course of routine experimentation and optimization in the absence of criticality to suit a particular application as is notoriously well known in the art.

Furthermore, Applicant absent some showing of unexpected results due to the claimed shape, the claimed shape would have been within the level of ordinary skill in the art.

As recited in claim 13, Mihara et al show that each of the combs includes: a first portion (including the comb outer edge) having an outer diameter approximately equal to the comb fixture inner surface; and a second portion (including the comb inner edge) extending closer to the slider assemblies and having an (arbitrary) outer diameter less than the comb fixture inner surface.

***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Utsonomiya (JP 10-241310 A) shows a disk drive comprising guide members (see 4H, for example) with varying thickness (see Figs. 15 and 17-18, for example) for regulating air flow (see Fig. 16). Tokhairin (US Pat. No. 5140578) shows a disk drive comprising baffle 25 and comb 27 (see Fig. 1, for example). Slezak (US Pat. No. 6356407 B1) shows a disk drive comprising a comb (see Fig. 1, wherein a comb is an unlabeled part projecting over disk 102 to the right of actuator assembly 104). Schirle (US Pat. No. 5898545) shows baffle 40 and combs 36. Hall (US Pat. No. 5134530) shows combs (see Fig. 2) upstream from an actuator assembly (see Fig. 1) and explicitly teaches that "the **shape**, orientation, and **dimensions** of the air stripper may be changed to suit a particular application" (see col. 6, lines 22-24, emphasis added). Myokan et al (US PAP No. 2002/0071202 A1) show a disk unit with increased head-positioning accuracy (see Fig. 5) wherein "a shroud and a spoiler are integrated into an integrated member 90" (see ¶ 0051); however, the filing date of Myokan et al is later than the filing date of the instant application.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julie Anne Watko whose telephone number is (703) 305-7742. The examiner can normally be reached on Mon-Thurs 10:30-8 and alternate Fri 9:30-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T. Nguyen can be reached on (703) 305-9687. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9315 for After Final communications.

Art Unit: 2652

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

Julie Anne Watko  
Examiner  
Art Unit 2652

JAW  
July 29, 2002

